

Table of Contents

| | |
|---|-------------|
| EXECUTIVE SUMMARY | ES-1 |
| 1. INTRODUCTION | |
| Background..... | 1-2 |
| Health Effects of Air Toxics and Ultrafine Particles (UFPs) | 1-4 |
| Estimates of Risks..... | 1-4 |
| 2. AIR TOXICS MONITORING AND ANALYSES | |
| Substances Monitored..... | 2-2 |
| Monitoring Sites..... | 2-3 |
| Advanced Air Monitoring Efforts..... | 2-6 |
| Ambient Sampling Schedule..... | 2-7 |
| Monitoring and Laboratory Analysis..... | 2-7 |
| Quality Assurance and Quality Control..... | 2-10 |
| MATES V Sampling Issues..... | 2-12 |
| Air Toxics Cancer Risk Estimates..... | 2-13 |
| Chronic Non-Cancer Risk Estimates..... | 2-14 |
| Findings..... | 2-15 |
| 3. DEVELOPMENT OF THE TOXICS EMISSIONS INVENTORY | |
| Introduction..... | 3-1 |
| Overview..... | 3-1 |
| Point Sources | 3-2 |
| Area Sources | 3-2 |
| On-Road Mobile Sources..... | 3-3 |
| Off-Road Mobile Sources | 3-7 |
| Summary of Air Toxic Emissions..... | 3-8 |
| Emissions and Air Quality Changes for Select Air Toxics Since MATES IV..... | 3-11 |
| 4. REGIONAL MODELING AND EVALUATION | |
| Background..... | 4-2 |
| Modeling Setups | 4-4 |
| Modeling Results | 4-5 |
| Inhalation-Only Cancer Risk..... | 4-11 |
| Multiple-Pathway Cancer Risk..... | 4-21 |
| Chronic Non-Cancer Risk from Exposure to Air Toxics..... | 4-23 |
| Analysis of Air Toxics Risks in Environmental Justice Communities..... | 4-23 |
| Summary and Conclusion..... | 4-31 |
| 5. ULTRAFINE PARTICLES AND BLACK CARBON MEASUREMENTS | |
| Ultrafine Particle Measurements at Fixed Sites..... | 5-2 |
| Black Carbon Measurements at Fixed Sites..... | 5-14 |